

Iran and the US Navy in the Persian Gulf

Tensions between the US and Iran are escalating because of Iranian nuclear programmes and allegations that Iran is assisting Shia Muslim militias and insurgents in Iraq. In response to this, the US has adopted a very provocative posture with a significant display of naval forces and three US Navy carrier battle groups are now operating in or near the Persian Gulf.

A US Navy carrier battle group consists of a collection of seven to 10 ships. The primary platform is the aircraft carrier and all the other ships and submarines in the group support or defend the carrier.

Every ship entering the Persian Gulf must pass through the narrow channel known as the Straits of Hormuz. This 200 km-long, horseshoe-shaped passage is very narrow (less than 50 km wide at its narrowest points) and bordered by Iran to the north and the United Arab Emirates and Oman to the south.

The collision between a US Navy attack submarine and a Japanese super-tanker in January 2007 is testament to the tight quarters of this channel.

The US Navy has had problems operating in the Persian Gulf in the past. In 1991, Iraqi floating mines heavily damaged two US Navy ships loitering off the coast of Kuwait. In 1987, an Iraqi fighter aircraft mistakenly attacked a US Navy frigate operating in the Persian Gulf. Thirty-seven men died and the ship was nearly lost when two missiles struck.

Defending Iranian coastline

With more than 2,450 km of Persian Gulf coastline, Iran needs a robust navy and maritime defences. Iran operates three diesel-electric submarines that it purchased from the former Soviet Union in the late 1980s.

These boats carry mines and several different kinds of torpedoes. Although these submarines would be vulnerable to detection in the open waters of the Persian Gulf, loitering in shallow waters near the coastline will make them much harder to detect.

This type of submarine has proven elusive to US Navy anti-submarine warfare. In October 2006, a Chinese submarine tracked an US carrier battle group engaging in exercises off Okinawa. Only when the submarine surfaced did the US become aware of its presence.

By then, the aircraft carrier (the USS Kitty Hawk) was well with range of the submarines' weapons. Additionally, the US Navy has leased a sophisticated diesel-electric submarine and crew from Sweden for the last two years in an effort to improve their anti-submarine warfare programme.

The Islamic Republic Guards Corps (IRGC) maintains a surface maritime force independent of the Iranian Navy that includes about 30 large fast attack craft and more than 40 smaller and faster 'swarm' boats. The fast attack craft are gunboats with a top speed in excess of 35 knots, carrying an array of large and small calibre guns, anti-ship missiles and shoulder-launched anti-aircraft missiles.

The 'swarm' boats are Swedish-built Boghammer lightly armed patrol craft and Chinese-built high-speed (50 knots) catamarans that carry only one gun and a battery of eight anti-ship missiles.

The Iranian Air Force (IAF) consists of older fighter and attack aircraft. Short on parts, training and an integrated air defence system, the IAF would be outmatched by US frontline fighter aircraft. But since some of the aircraft can carry anti-ship missiles, the IAF warrants the allocation of US defensive assets.

Iran possesses an extensive inventory of anti-ship missiles that can be fired from ships, aircraft and either fixed or mobile land launchers. With ranges up to 150 km, nearly all of the Persian Gulf and the entire Straits of Hormuz is within reach of Iranian missiles.

In those few areas where the US Navy would be safe from land-based missiles, those ships would be vulnerable to missiles launched by ship or from the air. With either armour-piercing or high explosive warheads, even a single hit on a smaller ship in the carrier battle group could cause significant damage.

US vulnerability

During the 1990-91 Gulf War, Iraqi floating mines badly damaged two major US Navy warships. Acknowledging a vulnerability to mines, a 1992 US Navy Mine Warfare plan stated this Gulf War would have been "altered significantly" if Iraq had expanded mine laying in the southern Persian Gulf. Any excursion into the Persian Gulf today faces a greater threat from more sophisticated mines.

Iran has two types of anti-ship mines; the old floating design and a new design that is positioned on the sea floor and consists of a cluster of mines.

When activated by a passing ship, one or more mines launch from this underwater platform into the underside of the ship. Sheer numbers and the lack of corresponding resources to find and defeat them make the mine threat even more dangerous.

Iran has three small coastal submarines. These boats are 30 m in length and are armed with torpedoes. They would be effective in the coastal waters of the Persian Gulf as well as the Straits of Hormuz. Just their presence would strain the carrier battle groups' anti-submarine warfare assets.

A weapon showcased in recent Iranian war games is a high-speed (195 knots) short-range (7 km) torpedo. Such a weapon launched in proximity of US Navy forces would be very difficult to defend against.

Iran's defence doctrine is to make an attack against it very painful, so military and technological superiority may not be sufficient to completely protect the US Navy operating in the Persian Gulf.

The sheer volume of weapons that the Iranians can bring to bear may in itself be the most formidable threat to the US fleet. ■